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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,978	10/17/2001	J. Barry Shackleford	10019023-1	4384

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EXAMINER	
PHAN, THAI Q	
ART UNIT	PAPER NUMBER
2128	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/977,978	SHACKLEFORD ET AL.	
	Examiner	Art Unit	
	Thai Q. Phan	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24 and 29* is/are rejected.

7)☒ Claim(s) *25-28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to applicants' amendment filed on 10/28/2005. Claims 1-29 are pending in the Action.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Gutowitz, H., US patent no. 5,365,589.

As per claim 1, Gutowitz anticipates a computation method implemented in a computation system for simulating/emulating a cellular automata for random data generation with feature limitations very identical to the claimed invention. According to Gutowitz, the method includes

Determining a set of simulation or emulation parameters

Initializing the software for simulation

Storing state values for the cellular automata cells and rules for operations in parallel when executed.

And outputting random numbered code words or state values from the cellular based simulation (col. 4, line 12 to col. 9, line 18).

As per claims 2-6, Gutowitz anticipates cellular automata with cells and operation rules as claimed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 7-24 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Lyke, C. J., US patent no. 6,215,327.

As per claim 7, Lyke anticipates a method and system to generate a software code emulating a cellular automata (CA) based random number generator with feature limitations very identical to the claimed invention. According to Lyke, the computer implemented method for generating random number includes steps

Determining random number generation (RNG) parameters (col. 21, line 55 to col. 22, line 15),

Determining templates or look-up tables used for cellular automaton based design (col. 23, line 53 to col. 24, line 35),

Determining functional definition of the CA based RNG generation (cols. 23-24),

Determining initialization routine for the generated RNG, and

Determining simulation results and outputting codes for the generation RNG (col. 21, line 55 to col. 22, line 15, col. 22, lines 27-49, col. 23, line 53 to col. 24, line 35) to program the FPGA wherein the FPGA configuration program generated with a random structure, error free, a reduce complexity, random scaling parameters according to the predetermined cellular automata.

As per claim 8, Lyke anticipates a plurality of interconnection topologies for cellular automaton based RNG (cols. 11-14).

As per claims 9-17, Lyke anticipates the claimed limitations in the CA based RNG generation.

As per claim 18, Lyke anticipates a computer system for generating and simulating cellular automata based random number generation with feature limitations very identical to the claimed invention. According to Lyke, the system includes means/modules:

Determining random number generation (RNG) parameters (col. 21, line 55 to col. 22, line 15),

Determining look-up table templates used for cellular automaton based design (col. 23 and col. 24),

Determining functional definition of the CA based RNG generation,

Determining initialization routine for the generated RNG, and

Determining simulation results and outputting code for the generation RNG (col. 21, line 55 to col. 22, line 15, col. 22, lines 27-49, cols. 23-24) to program the FPGA according to a CA based generator.

As per claims 19-24 and 29, Lyke anticipates the claimed limitations for RNG generation and simulation.

Allowable Subject Matter

Claims 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

In response to applicants' argument Gutowitz does not disclose or suggest software emulation or simulation of a cellular automata based random number generator with the limitations as claimed, the examiner disagrees with. Gutowitz discloses a method and system for emulating or simulating a random number generator based on a cellular automaton using a parallel hardware simulator (col. 4, lines 12-32). The cellular automata based simulator is to simulate the generation of encryption data for various applications with different schemes such as 1-bit different, element sizes of an encoding array, etc. (cols. 16-18). The simulator system requires a massively parallel architecture, computation software, and others for controlling massive simulation and independently executing part of the computation software (col. 4, lines 26-32). The computation software includes computation means and steps: defining or determining a set of emulation parameters for the cellular automat based generator such as bit numbers, run length, etc (col. 4, lines 12-29), initializing the software

program for simulating or emulating the cellular automata (col. 4, lines 12-29), storing sate values from the cells in the software variables to generate encryption data such as word or rule operations on the cells/variables enables the simulation to occur in parallel as claimed (col. 7, line 64 to col. 9, line 18).

In response to applicants' argument Lyke does not disclose or suggest a computer implemented method for generating a software code emulating a cellular automata for a random number generator, the examiner disagrees with. Lyke discloses a method for generating a program to simulate a cellular automata for the random number generator in a configuration or implementation of the FPGA (col. 21, line 55 to col. 22, line 15, col. 22, line 63 to col. 25, line 50). The generated program in Lyke disclosure implements a cellular simulation algorithm to generate a random number such as configuration program parameters, a scale of the configuration program, program complexity in terms of program structures, testability, fault free, etc for FPGA configuration and processing.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US patent no. 6,058,385, issued to Koza et al, on May 2000

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai Q. Phan whose telephone number is 571-272-3783. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jan. 19, 2006

Thai Phan
Patent Examiner
Art Unit: 2128